An Examination of Feedback Seeking in Individuals With Social Anxiety Disorder, Generalized Anxiety Disorder, or No History of Mental Disorder Using a Daily Diary Method

Gillian A. Wilson, MA Naomi Koerner, PhD Martin M. Antony, PhD

Department of Psychology, Ryerson University, Toronto, Canada

This study examined excessive reassurance seeking (or positive feedback seeking; PFS) and negative feedback seeking (NFS) in individuals with social anxiety disorder (SAD), generalized anxiety disorder (GAD), or no history of mental health difficulties. A 2-week daily diary method was used to examine potential group differences in the frequency, topics, and targets of PFS and NFS. The SAD and GAD groups reported significantly higher feedback seeking (FS) than the healthy group on self-report questionnaires. The most common targets of FS in each group were other people (e.g., romantic partner, family members). According to diary data, there were no significant group differences in the frequency of PFS, NFS, overall FS, or overall FS adjusted for self-reported compliance with diary completion (after applying Bonferroni correction). There were also no significant group differences in FS topics according to diary data. Future research directions and potential implications of these findings are discussed.

Keywords: positive feedback seeking; negative feedback seeking; social anxiety disorder; generalized anxiety disorder; daily diary method

ocial anxiety disorder (SAD) is one of the most common anxiety disorders, with a lifetime prevalence rate of 12.1% (Kessler et al., 2005). The core feature of SAD is marked anxiety about one or more social situations due to fear of negative evaluation (FNE; American Psychiatric Association, 2013). Individuals with SAD have impaired functioning in various life domains (e.g., social, occupational; Kessler, 2003) and reduced quality of life compared to non-anxious individuals (Barrera & Norton, 2009).

Cognitive theories of SAD propose that socially anxious individuals doubt their ability to meet perceived social standards, leading them to experience negative self-images (Hackmann, Surawy, & Clark, 1998) and to overestimate the likelihood of feared outcomes (e.g., negative

evaluation; e.g., Clark & Wells, 1995; Hofmann, 2007). In an attempt to prevent the occurrence of feared outcomes and reduce associated distress, socially anxious individuals engage in a number of safety behaviors, which paradoxically maintain social anxiety over time (Clark & Wells, 1995; Wells et al., 1995). One such behavior is *excessive reassurance seeking* (ERS), also referred to as *positive feedback seeking* (PFS; Casbon, Burns, Bradbury, & Joiner, 2005). ERS has been defined as "the repeated solicitation of safety-related information from others . . . despite having already received this information" (Parrish & Radomsky, 2010, p. 211). Although receiving sought-after reassurance may temporarily reduce social anxiety, reassurance seeking has been shown to increase symptoms of social anxiety over time (Cougle et al., 2012) and to contribute to reduced partner-rated interaction quality (Heerey & Kring, 2007).

There is evidence that socially anxious individuals engage in another form of feedback seeking (FS) called *negative feedback seeking* (NFS; Valentiner, Skowronski, McGrath, Smith, & Renner, 2011), a self-verification process whereby individuals with negative self-beliefs prefer negative over positive self-relevant information (Casbon et al., 2005). For example, a previous study found that individuals with low perceived social competence were more likely to select interaction partners who appraised them unfavorably as compared to positive evaluators (Swann, Stein-Seroussi, & Giesler, 1992). While the desire to receive negative self-verifying information is counterintuitive, self-verification theory posits that people value stability in their self-concept and may therefore request feedback that confirms and reinforces self-beliefs, even when these beliefs are negative, which may lead to reductions in self-esteem and the maintenance or worsening of negative affect (e.g., North & Swann, 2009; Swann & Read, 1981).

Further, consistent with *the bivalent fear of evaluation* (BFOE) *model*, there is evidence that socially anxious individuals fear both negative *and* positive evaluation (Weeks, Heimberg, & Rodebaugh, 2008). Although socially anxious individuals may seek reassurance from others, the BFOE model posits that these individuals are apprehensive about receiving positive feedback due to concerns about appearing "too good" in front of others (Weeks & Howell, 2012) or concerns about meeting others' high expectations in future social interactions (Gilbert, 2001). Therefore, socially anxious individuals may attempt to undermine or dismiss positive feedback by subsequently engaging in NFS.

It is important to note that FS has been described as a behavioral manifestation of anxiety across various anxiety disorders (and is therefore not exclusive to SAD; Cougle et al., 2012). For example, individuals with generalized anxiety disorder (GAD) reported engaging in significantly more reassurance seeking than healthy individuals as an attempt to control or reduce worry (Beesdo-Baum et al., 2012). In addition, reassurance seeking has been shown to increase symptoms of generalized anxiety over time after controlling for depressive symptoms, trait anxiety, and intolerance of uncertainty (IU), suggesting that the association between reassurance seeking and generalized anxiety is not better accounted for by related psychological constructs (Cougle et al., 2012). To our knowledge, no research to date has examined potential associations between GAD and NFS. However, individuals with GAD have been shown to endorse dysfunctional beliefs about their ability to effectively cope with uncertainty and solve problems (e.g., Robichaud & Dugas, 2005). According to self-verification theory, individuals with GAD may seek negative feedback to verify negative self-views in these specific domains.

The core feature of GAD is excessive worry about various life domains including, but not limited to, the health and well-being of oneself and others, responsibilities at work, school, and home, finances, and decision making (American Psychiatric Association, 2013). Indeed, previous research has demonstrated that some of the most common areas of worry among individuals with GAD in both clinical and community samples include family/interpersonal relationships, health and well-being, work/school, finances, and "miscellaneous" concerns, such as completing

tasks in a timely manner (e.g., Becker, Goodwin, Hölting, Hoyer, & Margraf, 2003; Diefenbach, Stanley, & Beck, 2001; Sanderson & Barlow, 1990).

Given that GAD is characterized by such pervasive worry, it stands to reason that individuals with GAD may seek reassurance about various topics (including those previously mentioned) as an attempt to reduce worry thoughts and associated negative affect and to increase a sense of control and security in their day-to-day lives (Beesdo-Baum et al., 2012). Further, previous research suggests that given the wide range of worry content in GAD, individuals with GAD rely on and seek reassurance from various "safety signals" or targets (e.g., romantic partner, family members, health-care professionals; Rapee, 1985; Woody & Rachman, 1994). However, despite efforts to reduce worry, individuals with GAD rarely experience a complete sense of security and remain vigilant to potential future threats, which may further motivate them to seek reassurance in multiple contexts and from numerous targets. The primary concerns in SAD, on the other hand, are less diffuse, focusing more on social/evaluative threats, which may be associated with narrower forms of FS. However, social/interpersonal concerns are also common in GAD (for a review, see Newman, Llera, Erickson, Przeworski, & Castonguay, 2013), raising the question of whether FS focused on social/evaluative concerns is unique to individuals with SAD or a shared behavior across these two anxiety disorders.

THE CURRENT STUDY

There is a paucity of research examining FS in anxiety-based problems, including SAD. As previously discussed, the limited research that does exist indicates that FS behaviors can have highly negative intrapersonal and interpersonal consequences and that FS may contribute to social anxiety over time (e.g., Cougle et al., 2012; Heerey & Kring, 2007). Although PFS and NFS can be understood as falling under the broad umbrella of safety behaviors, these specific constructs are rarely explicitly identified and discussed within cognitive and behavioral models of SAD (Wells et al., 1995) and little is known about the specific characteristics of FS in this clinical population. The current study aimed to address this gap in the literature by examining how FS naturally manifests in SAD—a question that could have important implications for advancing cognitive and behavioral models of SAD by increasing our understanding of behaviors that may maintain social anxiety (behaviors that have received little attention in the literature thus far), as well as implications for improving the assessment and treatment of SAD.

More specifically, the current study aimed to examine the frequency, topics, and targets of PFS and NFS in individuals with SAD. The term *PFS* was used instead of ERS to clearly differentiate this form of FS from NFS. PFS was defined as seeking and wanting positive, reassuring self-relevant information from other individuals, oneself, or targets other than people (i.e., external targets), such as books and websites, whereas NFS was defined as seeking and wanting negative self-relevant information from these targets. Individuals with GAD and individuals with no lifetime history of mental health difficulties were included as comparison groups to determine whether certain forms and features of FS are specific to SAD. GAD was chosen as the clinical comparison group because research has demonstrated a link between GAD and reassurance seeking (e.g., Beesdo-Baum et al., 2012; Cougle et al., 2012) and to determine whether FS focused on social/evaluative concerns is unique to SAD. A nonclinical comparison group (i.e., healthy group) was included to evaluate whether FS manifests differently in individuals with SAD versus individuals with no history of mental health difficulties.

The current study used a naturalistic daily diary method adapted from previous research (Antony, Rowa, Liss, Swallow, & Swinson, 2005; Wheeler & Miyake, 1992). Participants were asked to complete a diary record each time they engaged in PFS or NFS over a 2-week period. The

number of completed diary records provided an estimate of FS frequency. On each diary record, participants recorded the type of FS in which they engaged (PFS or NFS); the topics on which their FS centered (e.g., life achievements, signs of anxiety); and the targets of FS (e.g., romantic partner, family members). The following hypotheses and exploratory questions were advanced:

Hypothesis 1

Individuals with SAD and individuals with GAD would engage in significantly more PFS and NFS than individuals with no lifetime history of mental health difficulties (i.e., healthy individuals).

Hypothesis 2

Individuals with SAD and individuals with GAD would engage in similar levels of FS focused on social/evaluative concerns, whereas individuals with GAD would seek significantly more feedback focused on concerns that are more characteristic of GAD, such as decision making, personal health/well-being, health/well-being of others, personal safety, safety of others, and financial security as compared to individuals with SAD.

Hypothesis 3

Individuals with GAD would seek feedback from significantly more targets than individuals with SAD and healthy individuals, whereas individuals with SAD would seek feedback from significantly more targets than healthy individuals.

Hypothesis 4

Because several factors aside from actual behavior frequency may influence the number of completed diary records (e.g., increased recognition of behaviors; Antony et al., 2005), self-report questionnaires were included as trait-like measures of FS frequency, topics, and targets. It was predicted that diary records would be significantly correlated with scores on self-report questionnaires.

Exploratory Question

The following variables were examined as potential moderators of associations between diagnostic group and FS frequency: depressive symptoms, given previous research demonstrating a positive association between depression and FS frequency (see Evraire & Dozois, 2011); IU, given that reassurance seeking has been described as a behavioral manifestation of IU (Dugas & Robichaud, 2007); FNE and fear of positive evaluation (FPE), given that these constructs may prompt FS in SAD; and trait anxiety (i.e., the general tendency to experience stable levels of anxiety), which may lead individuals to engage in FS as a means to reduce anxiety symptoms.

METHOD

Participants

Participants were recruited through paper advertisements posted in downtown Toronto (e.g., university campuses) and through online advertisements (e.g., posted on Kijiji, Craigslist). Participants belonged to one of three groups: (a) SAD group, (b) GAD group, or (c) nonclinical comparison group (i.e., healthy group). Groups were established using the Mini International Neuropsychiatric Interview, Version 7.0 for DSM-5 (MINI 7.0; Sheehan, 2014) and additional

questions assessing for conditions not covered in the MINI 7.0 (see the "Procedure" section). To be eligible for the SAD group, individuals had to have a principal diagnosis of SAD and no diagnosis of GAD. To be eligible for the GAD group, individuals had to have a principal diagnosis of GAD and no diagnosis of SAD. Individuals meeting diagnostic criteria for both SAD and GAD were not eligible to participate. Individuals in the SAD group or GAD group could have other comorbid diagnoses as long as SAD or GAD was the principal diagnosis, respectively. To be eligible for the nonclinical comparison group, individuals had to have no lifetime history of mental health difficulties. All participants received \$30 following study completion.

A total of 151 individuals completed the telephone interview. Thirty-one (20.53%) were ineligible for not having a principal diagnosis of SAD or GAD, and 30 (19.87%) were ineligible for meeting criteria for both SAD and GAD. Additional exclusion criteria for the clinical groups included a diagnosis of substance use disorder in the past 3 months for which five (3.31%) individuals were excluded, evidence of psychotic disorder in the past 6 months for which two (1.32%) individuals were excluded, and evidence of a manic or hypomanic episode in the past 6 months for which four (2.65%) individuals were excluded. Consistent with previous research (Parrish & Radomsky, 2010), individuals who denied engaging in PFS or NFS in the past 6 months were excluded (one individual with GAD; 0.66%). Individuals had to be at least 17 years of age, report a good level of proficiency in the English language, and have daily Internet access. Two individuals (1.32%) were excluded due to reporting poor or fair English language ability.

Following the telephone screen, four (2.65%) eligible individuals declined to participate and two (1.32%) individuals did not attend their first lab visit. Two (1.32%) participants were excluded from data analyses due to limited understanding of the study protocol, two (1.32%) were excluded because more than 20% of their diary records were removed due to missing data, and five (3.31%) were excluded for producing outlier values. The final sample size was 61 (44 females, 16 males, and 1 transgendered individual), ranging from 17 to 69 years of age (M = 26.92 years, SD = 11.56). There were 21 participants in the SAD group, 20 in the GAD group, and 20 in the healthy group. The sample was predominately Asian (42.62%) and White (39.34%), and more than half of the sample held a university degree (55.74%). There were no significant group differences in gender, χ^2 (4) = 4.12, p = .39, Cramer's V = .18, age, F(2, 57) = 1.35, p = .27, $\omega^2 = .01$, ethnicity, χ^2 (10) = 10.78, p = .38, Cramer's V = .30, education level, χ^2 (8) = 7.26, p = .51, Cramer's V = .25, or compliance ratings, F(2, 58) = 1.92, p = .16, $\omega^2 = .03$.

Measures

Mini International Neuropsychiatric Interview, Version 7.0 for DSM-5 (MINI 7.0; Sheehan, 2014). The MINI is a structured diagnostic interview that assesses for the presence of several major forms of psychopathology. An earlier version of the MINI, the MINI for DSM-IV (MINI 6.0; Sheehan et al., 1998) has demonstrated good convergent validity with the Structured Clinical Interview for DSM-IV Disorders, Clinical Version (SCID-CV; de Azevedo Marques & Zuardi, 2008; First, Spitzer, Gibbon, & Williams, 1996), and very good interrater and test–retest reliability (Sheehan et al., 1998). In the current study, the MINI was administered to all potential participants over the telephone to determine study eligibility based on diagnostic status.

Social Phobia Inventory (SPIN; Connor et al., 2000). The SPIN is a self-report measure that assesses levels of fear, avoidance, and physiological symptoms associated with SAD. The SPIN has good internal consistency, test–retest reliability, construct validity, convergent validity, and discriminant validity (Antony, Coons, McCabe, Ashbaugh, & Swinson, 2006; Connor et al., 2000). Cronbach's α in the present sample was .95. In the current study, the SPIN was administered to evaluate differences in self-reported social anxiety and to provide increased confidence in diagnostic status (as determined by the MINI).

Generalized Anxiety Disorder Questionnaire (GAD-Q-IV; Newman et al., 2002). The GAD-Q-IV is a self-report measure that evaluates the presence of the Diagnostic and Statistical Manual of Mental Disorders (4th ed., DSM-IV; American Psychiatric Association, 1994) diagnostic criteria for GAD. Because the core symptoms of GAD have not changed in DSM-5, the GAD-Q-IV remains an appropriate measure of DSM-5-defined GAD symptoms. The GAD-Q-IV has demonstrated good test–retest reliability and good convergent and discriminant validity (Newman et al., 2002; Robinson, Klenck, & Norton, 2010). Cronbach's α in the present study was .93. In the current study, the GAD-Q-IV was administered to evaluate group differences in self-reported generalized anxiety, which would increase confidence in diagnoses (as determined by the MINI).

Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, & Borkovec, 1990). The PSWQ is a self-report measure that assesses trait-level worry. The PSWQ has demonstrated excellent internal consistency, good test–retest reliability, and good convergent, discriminant, and criterion validity (Meyer et al., 1990). Cronbach's α in the present study was .95. In the current study, the PSWQ was administered to evaluate group differences in self-reported worry and to provide increased confidence in diagnostic status (as determined by the MINI).

Feedback Seeking Diary (FSD). The FSD, which was developed for the current study, was adapted from the Rochester Social Comparison Diary (Wheeler & Miyake, 1992). The FSD was designed for recording (a) frequency of two types of FS (PFS or NFS; see Hypothesis 1), (b) topics of FS (see Hypothesis 2), and (c) targets of FS (see Hypothesis 3). Topic items were pilot tested with 11 clinical psychology graduate students who rated the extent to which each item reflected typical concerns in SAD versus GAD. More than 75% of the raters had to agree that a particular item was more characteristic of SAD or GAD for that item to be considered a social/evaluative threat versus a general threat, respectively. The following topics were identified as representing social/evaluative threats: social skills/competence, physical appearance, and signs of anxiety. The following topics were identified as representing general threats: personal abilities, life achievements, decision making, personal health/well-being, health/well-being of others, personal safety, safety of others, and financial security. Fewer than 75% of raters agreed that the following topics were more characteristic of either SAD or GAD: level of performance/accuracy in a specific situation, quality/security of interpersonal relationships, self-worth/lovability, and intelligence. These topics were classified as "other," as they may represent topics that are characteristic of both SAD and GAD or neither. Target items were adapted from previous research on social comparison processes (Antony et al., 2005; Wheeler & Miyake, 1992) and included romantic partner, family member, friend, acquaintance, stranger, oneself, professional/authority figure (e.g., lawyer, doctor, priest, manager), sources other than people (e.g., websites, books) and "other." As previously stated, the term PFS was chosen over ERS to clearly distinguish this form of FS from NFS. PFS was defined as a desire for positive self-relevant information, whereas NFS was defined as a desire for negative self-relevant information.

Positive Feedback Seeking Frequency Questionnaire (PFSFQ). Many factors aside from actual behavior frequency may explain the number of completed diaries, including increased recognition of behaviors, forgetfulness, fatigue, and practical barriers (Antony et al., 2005). The PFSFQ was developed for the current study to provide a trait-like measure of how often individuals, in general, seek positive feedback about a range of topics and from different targets (see Hypothesis 4). The topics are identical to those in the FSD and were therefore categorized as social/evaluative, general, or "other" concerns based on clinical psychology graduate students' ratings of the extent to which each topic reflected areas of concern in SAD versus GAD (as described earlier). Scores can be calculated for the three subscales (PFSFQ-Social, PFSFQ-General, and PFSFQ-Other) and the full scale (PFSFQ-Full). Cronbach's αs for PFSFQ-Social, PFSFQ-General, PFSFQ-Other, and PFSFQ-Full were .58, .80, .74, and .96, respectively. Cronbach's α for items assessing targets was .72.

Negative Feedback Seeking Frequency Questionnaire (NFSFQ). The NFSFQ is a self-report measure developed for the current study to provide a trait-like measure of how often, in general, individuals seek negative feedback about various topics and from different targets (for the same reasons outlined earlier; see Hypothesis 4). Items are identical to those in the FSD and the PFSFQ. Scores can be calculated for the three subscales (NFSFQ-Social, NFSFQ-General, and NFSFQ-Other) and the full scale (NFSFQ-Full). Cronbach's α s for NFSFQ-Social, NFSFQ-General, NFSFQ-Other, and NFSFQ-Full were .67, .88, .82, and .92, respectively. Cronbach's α for items assessing targets was .80.

Depressive Interpersonal Relationships Inventory—Reassurance-Seeking Subscale (DIRI-RS; Joiner, Alfano, & Metalsky, 1992). The DIRI-RS is a self-report measure of ERS frequency centering on themes of worth and lovability. The DIRI-RS has good criterion and construct validity (Joiner et al., 1992). Cronbach's α in the present study was .90. In the current study, the DIRI-RS was administered to evaluate potential associations between the FSD and the DIRI-RS (see Hypothesis 4).

Feedback Seeking Questionnaire (FSQ; Swann, Wenzlaff, Krull, & Pelham, 1992). The FSQ is a self-report measure that assesses preference for negative self-relevant information over positive self-relevant information in the following areas: social, intellectual, artistic/musical, athletic abilities, and physical appearance. The FSQ has demonstrated satisfactory construct validity, but relatively low internal consistency as indicated by Cronbach's αs of .63 (Joiner, Alfano, & Metalsky, 1993) and .68 (Joiner, Katz, & Lew, 1997). However, internal consistency is likely not an appropriate indicator of reliability for this particular measure given that the FSQ assesses five distinct domains. Therefore, in the current study, Cronbach's α was not calculated. The FSQ was administered to evaluate potential associations between the FSD and the FSQ (see Hypothesis 4).

Depression Anxiety Stress Scales, 21-item version (DASS-21; Lovibond & Lovibond, 1995). The DASS-21 is a self-report measure of depression (DASS-D), anxiety (DASS-A), and stress (DASS-S). In the current study, only the DASS-D subscale was analyzed. The DASS-21 has demonstrated good internal consistency and concurrent validity (Antony, Bieling, Cox, Enns, & Swinson, 1998). Cronbach's α for DASS-D in the present study was .89. In the current study, the DASS-21 was administered to evaluate whether depressive symptoms significantly moderated associations between diagnostic group and FS frequency (see Exploratory Question).

Intolerance of Uncertainty Scale (IUS; Buhr & Dugas, 2002). The IUS is a self-report measure that assesses IU, which is the tendency to respond negatively to uncertainty and its perceived consequences (e.g., Dugas, Gagnon, Ladouceur, & Freeston, 1998). The IUS has demonstrated excellent internal consistency and test–retest reliability and good convergent and discriminant validity (e.g., Buhr & Dugas, 2002). Cronbach's α in the present study was .95. In the current study, the IUS was administered to evaluate whether IU significantly moderated associations between diagnostic group and FS frequency (see Exploratory Question).

Brief Fear of Negative Evaluation Scale (BFNE-S; Leary, 1983). The BFNE-S is a self-report measure that assesses FNE. The BFNE-S has high internal consistency and good factorial, construct, convergent, and discriminant validity (Rodebaugh et al., 2004; Weeks et al., 2005; Weeks et al., 2008). Cronbach's α in the present study was .94. In the current study, the BFNE-S was administered to evaluate whether FNE significantly moderated associations between diagnostic group and FS frequency (see Exploratory Question).

Fear of Positive Evaluation Scale (FPES; Weeks et al., 2008). The FPES is a self-report measure that assesses FPE. The FPES has demonstrated good internal consistency, good test–retest reliability, and good factorial, construct, convergent, and discriminant validity (Weeks et al., 2008). Cronbach's α in the present study was .88. In the current study, the FPES was administered to evaluate whether FPE significantly moderated associations between diagnostic group and FS frequency (see Exploratory Question).

State-Trait Inventory for Cognitive and Somatic Anxiety (STICSA; Ree, French, MacLeod, & Locke, 2008). The STICSA is a self-report measure of state and trait anxiety. In the current study, only the STICSA-Trait scale was used. The STICSA has demonstrated excellent internal consistency, and good construct, convergent, and discriminant validity (Grös, Antony, Simms, & McCabe, 2007; Ree et al., 2008). Cronbach's α in the present study was .92. In the current study, the STICSA was administered to evaluate whether trait anxiety significantly moderated associations between diagnostic group and FS frequency (see Exploratory Question).

Procedure

All potential participants were administered the MINI and additional questions over the telephone to determine eligibility. All telephone interviews were administered by the principal investigator, a master's student in clinical psychology with extensive training in conducting diagnostic interviews, particularly in the area of anxiety disorders. The principal investigator worked under the supervision of a registered clinical psychologist with 25 years of assessment experience in the area of anxiety disorders. Eligible individuals were invited to the Anxiety Research and Treatment Lab at Ryerson University in Toronto, Ontario, Canada. Participants provided written informed consent and completed a series of self-report measures (see the "Measures" section), and were provided with a detailed description of the FSD, which they were asked to complete each time they engaged in PFS or NFS over the next 2 weeks. Participants were then provided with detailed descriptions of PFS and NFS, which were included in the FSD. PFS was defined as "seeking positive, reassuring information from others (e.g., romantic partner), oneself (e.g., reassuring self-talk), or other targets (e.g., websites). Seeking positive feedback from others is often in the form of direct verbal requests. When individuals engage in positive feedback seeking they want to receive positive self-relevant information." This description of PFS included specific examples (e.g., "asking your partner if he/she really loves you with the hope that your partner will affirm their love for you"). NFS was defined as "seeking negative information about oneself from others (e.g., romantic partner), oneself (e.g., negative self-talk), or other targets (e.g., websites). Seeking negative feedback from others is often in the form of direct verbal requests. When individuals engage in this type of feedback seeking they want to receive negative self-relevant information. Although wanting and seeking negative information may seem counterintuitive, there are a number of reasons why individuals engage in this type of behavior (e.g., to confirm negative self-beliefs, to ensure that interaction partners are aware of their shortcomings, etc.)." This description of NFS included specific examples (e.g., "asking your partner if he/she really loves you with the hope that your partner will express dislike or hostility towards you").

Participants were provided with hard copy FSDs if they were unable to access the electronic FSD. During the 2 weeks of diary recording, participants were sent a daily e-mail reminder (at random times throughout the day) with a link to an electronic version of the diary record, which was developed using Qualtrics Online Survey Software (Qualtrics Online Survey Software, 2015). The purpose of sending a daily e-mail reminder with electronic diary records attached was to prompt participants to accurately complete their diaries on a daily basis. After 2 weeks, participants returned to the lab where they rated their compliance, which was the percentage of FS behaviors captured in the FSDs. For example, if a participant completed 10 FSDs, but reported capturing 50% of his or her FS behaviors, the estimated frequency would be 20 FS episodes. This protocol for measuring participants' compliance has been used in previous diary studies in the Anxiety Research and Treatment Lab (McCabe-Bennett, Cassin, & Antony, 2015). All participants were debriefed and compensated \$30.

RESULTS

Group Differences on Self-Report Questionnaires and Self-Reported Compliance

The SAD group had significantly higher SPIN scores than the GAD and healthy groups, and the GAD group had significantly higher SPIN scores than the healthy group (both before and after Bonferroni correction was applied to control for Type I error rate). The clinical groups had significantly higher GAD-Q-IV, PSWQ, DASS-D, IUS, BFNE-S, FPES, and STICSA scores than the healthy group, whereas the clinical groups did not significantly differ on these measures (both before and after Bonferroni correction was applied). There were no significant group differences on self-reported compliance ratings with the FSDs (see Table 1 for self-report questionnaire scores).

Frequency of FS Behaviors Within Each Group

Over the 2 weeks of recording, mean frequency of PFS was 5.67 (SD = 3.67), .90 (SD = 1.22) for NFS, 6.57 (SD = 4.21) for overall FS (not adjusted for compliance), and 8.81 (SD = 5.69) for overall FS (adjusted for compliance) in the SAD group; 7.90 (SD = 4.54) for PFS, 1.35 (SD = 1.22) for NFS, 9.25 (SD = 4.66) for overall FS (not adjusted for compliance), and 13.30 (SD = 7.62) for overall FS (adjusted for compliance) in the GAD group; and 5.85 (SD = 4.72) for PFS, 1.05 (SD = 1.47) for NFS, 6.90 (SD = 5.53) for overall FS (not adjusted for compliance), and 8.40 (SD = 6.46) for overall FS (adjusted for compliance) in the healthy group. PFS was reported significantly more often than NFS in the SAD group, t(20) = 6.28, p < .001, r = .81, GAD group, t(19) = 6.14, p < .001, r = .82, and healthy group, t(19) = 5.04, p < .001, t = .76.

Hypothesis 1: Group Differences on Frequency of FS Behaviors

According to the FSDs, there were no significant group differences in frequency of PFS, F(2, 58) = 1.66, p = .20, $\omega^2 = .02$, NFS, F(2, 58) = .60, p = .55, $\omega^2 = .01$, or overall FS, F(2, 58) = 1.86, p = .17, $\omega^2 = .03$. There was, however, a significant group difference in frequency of overall FS adjusted for self-reported compliance with diary completion, F(2, 58) = 3.36, p = .04, $\omega^2 = .07$, such that the GAD group (M = 13.30, SD = 7.69) reported significantly more overall FS adjusted for compliance than did the SAD group (M = 8.81, SD = 5.69), t(39) = 2.13, p = .04, r = .32, and the healthy group (M = 8.40, SD = 6.46), t(38) = 2.18, p = .04, r = .33. There was no significant difference between the SAD group and the healthy group, t(39) = .22, t = .04. However, after controlling for Type I error inflation using Bonferroni correction, there was no significant group difference between the SAD group and the GAD group, t(39) = .21, t = .10, t = .32, the SAD group and the healthy group (t = 8.40, t = .40, t = .40), t = .40, or the GAD group and the healthy group, t(38) = 2.18, t = .07, t = .33.

Hypothesis 2: Group Differences on Topics of FS Behaviors

Diary data. There were no significant group differences on social/evaluative, general, or "other" concerns for PFS, V = .12, F(6, 114) = 1.26, p = .28, NFS, V = .11, F(6, 114) = 1.11, p = .36, or overall FS, V = .13, F(6, 114) = 1.30, P = .26 (see Table 2 for topics of overall FS).

Questionnaire Data. On the PFSFQ, the SAD and GAD groups scored significantly higher on all three subscales (social/evaluative, general, and "other") and the full scale compared to the healthy group, whereas there were no significant differences between the two clinical groups both before and after Bonferroni correction was applied. On the NFSFQ, the SAD and GAD groups scored significantly higher on two of the subscales (social/evaluative and "other") and the full

TABLE 1. Self-Report Questionnaire Scores Stratified by Group

	SAD	GAD	Nonclinical Comparison			
	(n = 21)	(n = 20)	(n = 20)	$F^{ m d}$	P	ω^2
$\overline{\text{SPIN } M (SD)}$	43.24 (8.46) ^a	28.15 (8.60) ^b	8.23 (7.02) ^c	96.81	<.001	.76
$GAD-Q-IV\ M\ (SD)$	7.31 (3.42) ^a	9.44 (2.29) ^a	1.60 (2.46) ^b	42.54	<.001	.58
$PSWQ\ M\ (SD)$	62.64 (8.36) ^a	64.43 (10.75) ^a	37.05 (11.23) ^b	36.24	<.001	.59
DASS-D M (SD)	$14.00 (10.70)^a$	19.70 (8.66) ^a	4.20 (4.89) ^b	17.11	<.001	.35
$IUS\ M\ (SD)$	84.17 (15.15) ^a	84.88 (12.62) ^a	54.10 (20.45) ^b	23.17	<.001	.42
BFNE-S M (SD)	29.57 (7.17) ^a	31.85 (4.65) ^a	15.10 (6.44) ^b	43.22	<.001	.58
FPES M (SD)	35.81 (18.89) ^a	32.20 (16.99) ^a	17.05 (12.56) ^b	7.46	.001	.17
STICSA M (SD)	44.76 (10.59) ^a	50.30 (6.38) ^a	28.10 (4.89) ^b	81.93	<.001	.59
PFSFQ-Social M					.001	.20
(SD)	6.48 (2.23) ^a	6.20 (2.75) ^a	3.55 (2.44) ^b	8.61		
PFSFQ-General M					.003	.15
(SD)	17.29 (3.82) ^a	17.90 (6.15) ^a	11.78 (7.63) ^b	6.50		
PFSFQ-Other <i>M</i>					.006	.13
(SD)	10.10 (2.83) ^a	9.50 (3.72) ^a	6.60 (4.04) ^b	5.60		
PFSFQ-Full M (SD)	33.95 (7.30) ^a	33.75 (10.97) ^a	22.03 (13.07) ^b	6.69	.003	.19
NFSFQ-Social M					<.001	.22
(SD)	4.48 (3.01) ^a	4.55 (2.91) ^a	1.30 (1.89) ^b	9.81		
NFSFQ-General <i>M</i> (SD)	7.90 (6.72)	8.15 (5.89)	3.80 (6.04)	3.02	.05	.06

(Continued)

TABLE 1. Self-Report Questionnaire Scores Stratified by Group (Continued)

	SAD	GAD	Nonclinical Comparison	Nonclinical Comparison				
	(n = 21)	(n = 20)	(n = 20)	$F^{ m d}$	p	ω^2		
NFSFQ-Other <i>M</i>					.001	.17		
(SD)	5.51 (3.71) ^a	5.80 (3.89) ^a	2.00 (2.70) ^b	7.46				
NFSFQ-Full M					.007	.13		
(SD)	17.28 (12.10) ^a	17.90 (11.63) ^a	7.44 (9.92) ^b	5.46				
Compliance M					.16	.03		
(SD)	79.52 (13.78)	74.75 (14.73)	83.90 (15.82)	1.92				

Note. Compliance refers to the percentage of feedback seeking (FS) behaviors that participants reportedly captured in the diary records. Effect size indicated by omega squared, ω^2 . Means that do not share a common superscript letter across rows are statistically different at p < .05 (both with and without Bonferroni correction). BFNE-S = Brief Fear of Negative Evaluation Scale; DASS-D = Depression Anxiety Stress Scales, 21-item version—Depression subscale; FPES = Fear of Positive Evaluation Scale; GAD = generalized anxiety disorder; GAD-Q-IV = Generalized Anxiety Disorder Questionnaire; IUS = Intolerance of Uncertainty Scale; NFSFQ-Full = Negative Feedback Seeking Frequency Questionnaire—General subscale; NFSFQ-Other = Negative Feedback Seeking Frequency Questionnaire—General subscale; NFSFQ-Other = Negative Feedback Seeking Frequency Questionnaire—Other subscale; NFSFQ-Social = Negative Feedback Seeking Frequency Questionnaire—General subscale; PFSFQ-Other = Positive Feedback Seeking Frequency Questionnaire Positive Feedback Seeking Frequency Qu

TABLE 2. MEAN PERCENTAGES OF TOPICS OF OVERALL FEEDBACK SEEKING OVER A 2-WEEK PERIOD (BASED ON DIARY RECORDS) STRATIFIED BY GROUP

			Nonclinical Comparison				
	SAD $(n = 21)$	GAD $(n = 20)$	(n = 20)	F^{a}	p	ω^2	
Social/Evaluative M% (SD)							
Social skills/competence	15.49 (17.98)	12.21 (13.23)	9.86 (18.92)	.58	.57	.01	
Physical appearance	24.53 (23.76)	23.27 (23.92)	16.97 (23.40)	.59	.56	.01	
Signs of anxiety	7.04 (10.98)	3.33 (5.82)	1.33 (4.64)	2.89	.06	.06	
General M% (SD)							
Personal abilities	18.34 (16.26)	19.51 (15.27)	20.99 (23.94)	.10	.90	.03	
Life achievements	14.23 (19.38)	20.45 (24.25)	8.91 (12.89)	1.77	.18	.02	
Decision-making	25.02 (23.29)	27.56 (26.73)	23.57 (26.45)	.13	.88	.03	
Personal health	11.96 (19.93)	13.34 (14.58)	3.76 (6.21)	2.45	.10	.05	
Health of others	6.02 (13.93)	3.48 (8.11)	1.71 (5.36)	.99	.38	.00	
Personal safety	1.54 (5.67)	3.14 (8.37)	3.25 (10.29)	.27	.77	.02	
Safety of others	6.85 (12.22)	.81 (2.57)	2.00 (8.94)	2.65	.08	.05	
Financial security	2.55 (6.77)	5.11 (12.99)	1.05 (3.45)	1.12	.33	.00	
Other $M\%$ (SD)							
Relationship quality	13.97 (14.31)	13.04 (18.90)	6.15 (12.25)	1.56	.22	.02	
Self-worth or lovability	18.21 (22.21)	17.77 (3.93)	11.28 (4.92)	.71	.50	.01	
Level of performance	30.82 (25.84)	27.73 (23.95)	23.33 (18.63)	.54	.58	.02	
Intelligence	9.70 (13.07)	12.54 (11.96)	6.99 (18.92)	.69	.51	.01	

Note. Social/Evaluative = topics that were rated as more characteristic of social anxiety than generalized anxiety by more than 75% of raters; General = topics that were rated as more characteristic of generalized anxiety than social anxiety by more than 75% of raters; Other = topics that fewer than 75% of raters agreed were more characteristic of social anxiety or generalized anxiety; therefore, these topics may be characteristic of both social anxiety and generalized anxiety or of neither social anxiety nor generalized anxiety. Effect size indicated by omega squared, ω^2 . GAD = generalized anxiety disorder; SAD = social anxiety disorder.

scale compared to the healthy group, whereas there were no significant differences between the two clinical groups both before and after Bonferroni correction was applied (see Table 1).

Hypothesis 3: Group Differences on Targets of FS Behaviors

Diary Data. There were no significant differences in the number of PFS targets between the SAD group (M = 2.67, SD = 1.65), GAD group (M = 3.45, SD = 1.57), and healthy group (M = 2.70, SD = 1.89), F(2, 58) = 1.35, p = .27, $\omega^2 = .01$. There were no significant group differences in the number of NFS targets between the SAD group (M = .90, SD = 1.37), GAD group (M = 1.40, SD = 1.47), and healthy group (M = .85, SD = 1.09), F(2, 58) = 1.06, p = .35, $\omega^2 = .00$. There were no significant group differences in the percentage of PFS, V = .35, F(16, 104) = 1.38, p = .16, NFS, V = .18, F(16, 104) = .62, p = .86, or overall FS from each target, V = .34, F(16, 104) = 1.33, p = .20.

In the SAD group, there was a significant difference in the percentage of overall feedback sought from people, oneself, and external targets (e.g., books, websites), F(1.14, 22.81) =50.89, p < .001, such that this group sought significantly more feedback from others compared to oneself, t(20) = 5.96, p < .001, r = .80, and compared to external targets, t(20) = 10.91, p < .001, r = .001= .93 (both before and after Bonferroni correction was applied to control for Type I error rate). There was no significant difference in the percentage of feedback sought from oneself versus external targets, t(20) = 1.74, p = .10, r = .36. In the GAD group, there was a significant difference in the percentage of feedback sought from others, oneself, and external targets, F(2, 38) = 164.85, p < .001, such that this group sought significantly more feedback from others compared to oneself, t(19) = 16.28, p < .001, r = .97, and compared to external targets, t(19) = 12.98, p < .001, r = .97= .95 (both before and after Bonferroni correction). There was no significant difference in the percentage of feedback sought from oneself versus external targets, t(19) = -.81, p = .43. In the healthy group, there was a significant difference in the percentage of feedback sought from others, oneself, and external targets, F(1.22, 23.26) = 78.89, p < .001, such that this group sought significantly more feedback from others compared to oneself, t(19) = 9.94, p < .001, r = 92, and compared to external targets, t(19) = 8.58, p < .001, r = .89 (both before and after Bonferroni correction). There was no significant difference in how often feedback was sought from oneself versus external targets, t(19) = -1.18, p = .25, r = .26. There were no significant group differences in the percentage of feedback sought from each target (see Table 3 for targets of overall FS).

Questionnaire Data. On the PFSFQ, the SAD group reported significantly more PFS from external targets than the healthy group, t(39) = 2.82, p = .007, r = .41 (both before and after Bonferroni correction). The GAD group reported significantly more PFS from friends than the healthy group, t(38) = 3.05, p = .004, r = .44; acquaintances, t(32.31) = 2.47, p = .02, r = .40; and external targets, t(38) = 3.54, t = .001, t = .50 (both before and after Bonferroni correction).

Hypothesis 4: Correlations Between Diary Recordings of FS and General Measures of FS

See Table 4 for correlations between frequency of FS over a 2-week period (based on diary records) and scores on general self-report measures of FS.

Exploratory Question 1: Moderators Between Diagnostic Group and FS Frequency

To test the potential moderating effects of depression, IU, FNE, FPE, and trait anxiety, the following variables were centered to reduce potential multicollinearity and then entered into the model: diagnostic group, the abovementioned moderator variables (one for each model), and the

TABLE 3. MEAN PERCENTAGES OF TARGETS OF OVERALL FS OVER A 2-WEEK PERIOD (BASED ON DIARY RECORDS) STRATIFIED BY GROUP

	SAD	GAD	Nonclinical			
	(n = 21)	(n = 20)	Comparison $(n = 20)$	F^{a}	p	ω^2
Targets M% (SD)						
Oneself	12.52 (25.83)	4.80 (12.47)	1.39 (4.56)	2.32	.12	.04
Other people	81.55 (31.51)	90.01 (15.41)	80.03 (35.67)	.70	.50	.01
Romantic partner	12.55 (21.61)	9.38 (16.20)	18.02 (31.27)	.67	.51	.01
Family member	27.63 (36.17)	18.14 (24.64)	16.53 (17.54)	.99	.38	.00
Friend	29.19 (34.50)	46.64 (30.50)	25.19 (28.08)	2.68	.08	.05
Acquaintance	4.65 (7.93)	7.51 (10.83)	6.63 (12.37)	.40	.67	.02
Stranger	3.57 (6.52)	3.28 (6.33)	1.05 (3.45)	1.22	.30	.01
Professional/authority	7.89 (13.83)	9.19 (11.43)	9.93 (14.87)	.12	.89	.03
External targets	2.81 (5.59)	8.18 (14.77)	5.28 (13.80)	1.02	.37	.00

Note. Individuals with SAD completed a total of 138 FSDs; individuals with GAD completed a total of 185 FSDs; and the nonclinical comparison group completed a total 138 FSDs. Effect size indicated by omega squared, ω^2 . FS = feedback seeking; FSD = Feedback Seeking Diary; GAD = generalized anxiety disorder; SAD = social anxiety disorder.

a df = 2.

TABLE 4. Correlations Between Frequency of FS Over a 2-Week Period (Based on Diary Records) and Scores on General Self-Report Measures of FS (N=61)

	PFSF-Q-	PFSF-Q-	PFSF-Q-	PFSF-Q-	NFSF-Q-	NFSF-Q-	NFSF-Q-	NFSF-Q-		
	Social	General	Other	Full	Social	General	Other	Full	DIRI-RS	FSQ
PFS Diaries	.16	.26*	.24	.25*	.05	05	.05	02	.17	11
NFS Diaries	.45***	.23	.42*	.37**	.39**	.27*	.40**	.33*	.31*	.18
Total	.25	.27*	.31*	.30*	.14	.03	.15	.07	.21	02
FSDs (no compliance)										
Total FSDs (compliance)	.32*	.30*	.34**	.34*	.22	.11	.25	.15	.24	.02

Note. DIRI-RS = Depressive Interpersonal Relationships Inventory—Reassurance-Seeking Subscale; FSQ = Feedback Seeking Questionnaire; NFS Diaries = Negative Feedback Seeking Diaries; NFSF-Q-Full = Negative Feedback Seeking Frequency Questionnaire—Full scale; NFSF-Q-General = Negative Feedback Seeking Frequency Questionnaire—Other subscale; NFSF-Q-Social = Negative Feedback Seeking Frequency Questionnaire—Social subscale; PFS Diaries = Positive Feedback Seeking Diaries; PFSF-Q-Full = Positive Feedback Seeking Frequency Questionnaire—Full scale; PFSF-Q-General = Positive Feedback Seeking Frequency Questionnaire—Other subscale; PFSF-Q-Social = Positive Feedback Seeking Diaries not adjusted for compliance; Total FSDs (compliance) = Total Feedback Seeking Diaries adjusted for compliance. *p < .05. **p < .01. ***p < .001.

interaction term. DASS-D, IUS, BFNE-S, FPES, and STICSA scores did not significantly moderate the relation between group and overall FS frequency adjusted for compliance, F(2, 55) = .01, p = .99, $\omega^2 = .03$; F(2, 55) = .77, p = .47, $\omega^2 = .01$; F(2, 55) = .34, p = .72, $\omega^2 = .02$; F(2, 55) = .33, p = .72, $\omega^2 = .02$; and F(2, 55) = .45, p = .64, $\omega^2 = .02$, respectively.

Summary of Main Results

According to the PFSFQ and the NFSFQ, the SAD and GAD groups endorsed significantly higher FS centered on most topics than the healthy group. However, based on the FSDs, there were no significant group differences in frequency of PFS, NFS, overall FS, or overall FS adjusted for compliance ratings (after Bonferroni correction was applied). According to the FSDs, there were no significant group differences on FS topics, number of FS targets, or percentage of feedback sought from each target. The most common FS targets within each group were other people (e.g., romantic partner, family members, friends).

DISCUSSION

The limited research examining FS behaviors in anxiety-based problems, including SAD, has demonstrated that these behaviors can have deleterious effects on anxiety symptoms (e.g., Cougle et al., 2012) and interpersonal functioning (e.g., Heerey & Kring, 2007). However, FS behaviors are rarely discussed within cognitive and behavioral models of SAD, and the phenomenology of these behaviors remain largely unknown in the context of SAD. Therefore, the current study aimed to elucidate specific forms and features of FS in individuals with SAD as compared to individuals with GAD and healthy controls to determine whether FS behaviors, specifically PFS and NFS, manifest differently in individuals with SAD, which could have important theoretical and clinical implications (as discussed in the following text). The results of this study showed that on trait-like self-report measures of FS (PFSFQ and NFSFQ), individuals with SAD and individuals with GAD endorsed significantly higher levels of overall PFS and NFS as compared to individuals with no history of mental health difficulties, whereas there were no significant differences in the frequency of PFS or NFS between the two clinical groups. In addition, other people (e.g., romantic partner, family members, friends) were the most common targets of FS within each group, and the two clinical groups reported engaging in significantly more PFS from external targets (e.g., books, websites) as compared to healthy individuals.

Consistent with predictions, the SAD and GAD groups scored significantly higher than the healthy group on the PFSFQ, a trait-like self-report measure of PFS. This finding corroborates previous research findings demonstrating a link between social anxiety and reassurance seeking (e.g., Cougle et al., 2012; Heerey & Kring, 2007) and between generalized anxiety and reassurance seeking (Beesdo-Baum et al., 2012). While these findings are correlational (precluding conclusions about direction of causality), they suggest that perhaps PFS (i.e., reassurance seeking) functions as a safety behavior that reduces anxiety in the short-term but maintains or increases anxiety over time, thereby representing a potentially important assessment and treatment target and an important addition to cognitive and behavioral models of anxiety. Also consistent with our first hypothesis was the finding that the SAD and GAD groups scored significantly higher than the healthy group on the NFSFQ, a trait-like self-report measure of NFS. This finding suggests that individuals with SAD or GAD may be more likely to seek negative self-relevant information to confirm negative self-views, which may reduce self-esteem and increase negative affect (e.g., anxiety; North & Swann, 2009; Swann & Read, 1981). However, these findings should be interpreted with caution given that these measures require

further validation. Certain proposed subscales of the PFSFQ and NFSFQ had low Cronbach's αs (specifically the social/evaluative subscales), suggesting that these categories (i.e., social/evaluative, general, and "other") do not actually represent distinct constructs. It is therefore recommended that future research studies use the PFSFQ and NFSFQ full scales to assess frequency of overall PFS and NFS. Additionally, it will be important for future studies to examine whether FS does in fact contribute to anxiety symptoms over time as assessed by well-validated measures.

Alternatively, significant group differences on the PFSFQ and NFSFQ may reflect biased reporting of FS behaviors rather than actual differences in FS frequency. Perhaps the higher FS frequency reported by the SAD group stems from concerns about meeting perceived social standards and wanting to avoid being negatively evaluated in a research setting (Hackmann et al., 1998), leading to overreporting. Similarly, perhaps the higher FS frequency reported by the GAD group reflects uncertainty and worry about not accurately reporting FS frequency (i.e., not completing the study measures "correctly"). In fact, previous research found that concern over mistakes and doubting one's actions were significantly associated with generalized anxiety (Handley, Egan, Kane, & Rees, 2014), which may contribute to biased reporting. It is recommended that future research in this area implement strategies for controlling potential demand characteristics and biased reporting.

Contrary to predictions and inconsistent with the abovementioned results, there were no significant group differences on frequency (with the exception of overall FS adjusted for compliance before Bonferroni correction was applied), topics, or targets of FS according to the FSDs. However, an interesting finding was that the most common targets of FS within each group were other people (e.g., romantic partner, family members, friends), which is consistent with research demonstrating that FS is a highly interpersonal process that may have significant negative interpersonal consequences, leading to increases in negative affect (see Evraire & Dozois, 2011). The finding that individuals with SAD were more likely to seek feedback from other people compared to oneself and external targets is particularly interesting in light of current cognitive-behavioral models of SAD, suggesting that socially anxious individuals overestimate the occurrence of negative social outcomes, resulting in avoidance of social interactions (Hofmann, 2007). Perhaps in some social contexts the need to seek and receive reassurance from others competes with and overrides the fear of interacting with others (e.g., professionals and authority figures). However, the most common targets of FS were close others, including romantic partners, family members, and friends (i.e., people who may be perceived as "safe") with whom socially anxious individuals likely feel the least anxious and the most comfortable (see Vittengl & Holt, 1998), which may explain in part why these individuals were the most common FS targets. Taken together, these findings suggest that clinicians should assess the extent to which individuals seek feedback from other people and whether this type of FS has a negative impact on social functioning and interpersonal relationships.

One possible explanation for null findings regarding group differences on the FSDs is the methodology of the current study. Although daily diary methods have several advantages over more traditional methods (e.g., self-report questionnaires), including greater ecological validity and reduced recall bias, they have potential drawbacks, including *measurement reactivity*, whereby asking individuals to repeatedly monitor their behaviors leads to systematic changes in their behaviors (Gunthert & Wenze, 2012). Relatedly, it is possible that there were times when participants had an urge to engage in FS but then did not, which the diary would not have captured. The measurement of FS urges versus actual FS is an important area for future research, as the urge to seek feedback may be as clinically important as the act of seeking feedback. It is also important to note that the GAD

group reported significantly more overall FS adjusted for compliance compared to the SAD and healthy groups before Bonferroni correction was applied. After Bonferroni correction was applied, these differences were no longer significant. However, Bonferroni correction is a very conservative test designed to minimize Type I error at the cost of reduced statistical power and increasing the probability of Type II error (Morgan, 2007; Perneger, 1998). Therefore, replication of this research is needed to confirm whether these null findings are meaningful.

Further, perhaps participants simply did not recognize all of their FS behaviors, particularly subtler forms of FS. Examining the extent to which individuals can accurately identify and record their FS behaviors and whether individuals can be trained to more effectively recognize these behaviors are important areas for future study, which will enhance our understanding of the phenomenology and function of FS in anxiety-based problems. Another possible explanation for nonsignificant group differences on frequency, topics, and targets of FS according to the FSDs may be that the two clinical groups were not as distinct as expected. The SAD and GAD groups did not significantly differ on measures of worry, IU, FNE, and FPE, suggesting potential diagnostic overlap. A limitation of the study is that interrater reliability of diagnoses was not established, which may have contributed to possible diagnostic overlap. It is recommended that future studies investigating FS behaviors across diagnostic groups implement procedures (e.g., measuring interrater reliability) to increase confidence in diagnoses. Alternatively, worry, IU, FNE, and FPE may be better conceptualized as transdiagnostic processes that characterize both SAD and GAD. Indeed, Starcevic et al. (2007) found similar levels of pathological worry in individuals with SAD and individuals with GAD. Previous research also found that IU explained a significant amount of variance in social anxiety (Boelen & Reijntjes, 2009) and that IU levels in social anxiety were comparable to those in generalized anxiety (Carleton, Collimore, & Asmundson, 2010). Further, social concerns are common in GAD (e.g., Woody & Rachman, 1994), which may explain why individuals with SAD and those with GAD did not significantly differ on measures of FNE and FPE.

In addition, it is important to note that the frequency of FS within each group was quite low, raising the question of whether FS in the current sample can be considered *excessive* or maladaptive. There are no normative data on FS in the literature, making it difficult to determine when FS can be deemed problematic (Evraire & Dozois, 2011). Evraire and Dozois (2011) have suggested that anxious individuals may engage in "nonsecure" forms of FS that communicate distress, which may lead to adverse interpersonal outcomes (e.g., negative evaluation), whereas healthy individuals may engage in more "secure" forms of FS, which may facilitate social interactions. More research is needed to determine what differentiates normative FS behaviors from more pathological forms. For example, perhaps anxious individuals demonstrate higher levels of distress during FS (e.g., through verbal or nonverbal cues, such as tone of voice) compared to healthy individuals, which may lead to differential psychological and interpersonal outcomes (e.g., negative evaluation or rejection by others).

As expected, FS frequency based on the FSDs significantly correlated with various trait-like measures of FS. For example, PFS was significantly associated with the PFSFQ-General subscale and the PFSFQ-Full scale. Unexpectedly, PFS did not significantly correlate with the DIRI-RS perhaps because the DIRI-RS measures more specific forms of FS (i.e., FS centering on themes of worth and lovability). NFS significantly correlated with trait-like measures of both NFS and PFS, including the DIRI-RS, suggesting that individuals who engage in NFS are also likely to engage in PFS. Also unexpected was the finding that frequency of NFS did not correlate with the FSQ perhaps because the FSQ measures preference for negative self-relevant information over positive self-relevant information rather than frequency of NFS. It

is recommended that future research continue to examine how to most effectively measure FS and whether different self-report measures of FS are actually measuring the same constructs.

Finally, null findings concerning the moderating effects of depression, IU, FNE, FPE, and trait anxiety were unexpected, given prior research indicating a significant association between depression and FS (Evraire & Dozois, 2011); descriptions of FS as a behavioral manifestation of IU (Dugas & Robichaud, 2007); theoretical models suggesting that socially anxious individuals experience FNE (Clark & Wells, 1995) and FPE (Weeks et al., 2008), which may motivate FS; and evidence that FS functions as a safety behavior aimed at reducing anxiety symptoms and would therefore theoretically be associated with higher levels of trait anxiety. Nonsignificant findings may be due in part to the methodology of the study, such that the FSD did not accurately measure the behaviors (i.e., PFS and NFS) that it was designed to measure (for reasons previously outlined). Future research should continue to examine the potential moderating effects of these psychological correlates using different modes of data collection.

Taken together, the current study provides insight into the frequency, topics, and targets of FS behaviors in individuals with SAD, individuals with GAD, and healthy individuals. The current findings raise important questions about how to optimally measure potential group differences in the specific features of FS and how to distinguish normative FS from maladaptive forms of FS, which likely have differential effects on psychological and interpersonal functioning (see Evraire & Dozois, 2011). These findings hold promise for improving the assessment of FS behaviors, which may, in turn, lead to improvements in the treatment of anxiety-based problems.

REFERENCES

- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: American Psychiatric Press.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Press.
- Antony, M. M., Bieling, P. J., Cox, B. J., Enns, M. W., & Swinson, R. P. (1998). Psychometric properties of the 42-item and 21-item versions of the Depression Anxiety Stress Scales in clinical groups and a community sample. *Psychological Assessment*, 10(2), 176–181. http://dx.doi.org/10.1037/1040-3590.10.2.176
- Antony, M. M., Coons, M. J., McCabe, R. E., Ashbaugh, A., & Swinson, R. P. (2006). Psychometric properties of the Social Phobia Inventory: Further evaluation. *Behaviour Research and Therapy*, 44(8), 1177–1185. http://dx.doi.org/10.1016/j.brat.2005.08.013
- Antony, M. M., Rowa, K., Liss, A., Swallow, S. R., & Swinson, R. P. (2005). Social comparison processes in social phobia. *Behavior Therapy*, *36*(1), 65–75. http://dx.doi.org/10.1016/S0005-7894(05)80055-3
- Barrera, T. L., & Norton, P. J. (2009). Quality of life impairment in generalized anxiety disorder, social phobia, and panic disorder. *Journal of Anxiety Disorders*, 23(8), 1086–1090. http://dx.doi.org/10.1016/j.janxdis.2009.07.011
- Becker, E. S., Goodwin, R., Hölting, C., Hoyer, J., & Margraf, J. (2003). Content of worry in the community: What do people with generalized anxiety disorder or other disorders worry about? *The Journal of Nervous and Mental Disease*, 191(10), 688–691. http://dx.doi.org/10.1097/01.nmd.0000092198.20420. fc
- Beesdo-Baum, K., Jenjahn, E., Höfler, M., Lueken, U., Becker, E. S., & Hoyer, J. (2012). Avoidance, safety behavior, and reassurance seeking in generalized anxiety disorder. *Depression and Anxiety*, 29(11), 948–957. http://dx.doi.org/10.1002/da.21955
- Boelen, P. A., & Reijntjes, A. (2009). Intolerance of uncertainty and social anxiety. *Journal of Anxiety Disorders*, 23(1), 130–135. http://dx.doi.org/10.1016/j.janxdis.2008.04.007

- Buhr, K., & Dugas, M. J. (2002). The Intolerance of Uncertainty Scale: Psychometric properties of the English version. *Behaviour Research and Therapy*, 40(8), 931–945. http://dx.doi.org/10.1016/S0005-7967(01)00092-4
- Carleton, R. N., Collimore, K. C., & Asmundson, G. J. (2010). "It's not just the judgments—It's that I don't know": Intolerance of uncertainty as a predictor of social anxiety. *Journal of Anxiety Disorders*, 24(2), 189–195. http://dx.doi.org/10.1016/j.janxdis.2009.10.007
- Casbon, T. S., Burns, A. B., Bradbury, T. N., & Joiner, T. E. (2005). Receipt of negative feedback is related to increased negative feedback seeking among individuals with depressive symptoms. *Behaviour Research and Therapy*, 43(4), 485–504. http://dx.doi.org/10.1016/j.brat.2004.03.009
- Clark, D. M., & Wells, A. (1995). A cognitive model of social phobia. In R. G. Heimberg, M. R. Liebowitz, D. A. Hope, & F. R. Schneier (Eds.), *Social phobia: Diagnosis, assessment, and treatment* (pp. 69–93). New York, NY: Guilford Press.
- Connor, K. M., Davidson, J. R., Churchill, L. E., Sherwood, A., Foa, E., & Weisler, R. H. (2000). Psychometric properties of the Social Phobia Inventory (SPIN). New self-rating scale. *The British Journal of Psychiatry*, 176, 379–386.
- Cougle, J. R., Fitch, K. E., Fincham, F. D., Riccardi, C. J., Keough, M. E., & Timpano, K. R. (2012). Excessive reassurance seeking and anxiety pathology: Tests of incremental associations and directionality. *Journal of Anxiety Disorders*, 26(1), 117–125. http://dx.doi.org/10.1016/j.janxdis.2011.10.001
- de Azevedo Marques, J. M., & Zuardi, A. W. (2008). Validity and applicability of the Mini International Neuropsychiatric Interview administered by family medicine residents in primary health care in Brazil. *General Hospital Psychiatry*, 30(4), 303–310. http://dx.doi.org/10.1016/j.genhosppsych.2008.02.001
- Diefenbach, G. J., Stanley, M. A., & Beck, J. G. (2001). Worry content reported by older adults with and without generalized anxiety disorder. *Aging & Mental Health*, 5(3), 269–274. http://dx.doi.org/10.1080/13607860120065069
- Dugas, M. J., Gagnon, F., Ladouceur, R., & Freeston, M. H. (1998). Generalized anxiety disorder: A preliminary test of a conceptual model. *Behaviour Research and Therapy*, 36(2), 215–226. http://dx.doi.org/10.1016/S0005-7967(97)00070-3
- Dugas, M. J., & Robichaud, M. (2007). Cognitive-behavioral treatment for generalized anxiety disorder: From science to practice. New York, NY: Routledge.
- Evraire, L. E., & Dozois, D. J. (2011). An integrative model of excessive reassurance seeking and negative feedback seeking in the development and maintenance of depression. *Clinical Psychology Review*, *31*(8), 1291–1303. http://dx.doi.org/10.1016/j.cpr.2011.07.014
- First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (1996). Structured Clinical Interview for DSM-IV Axis I Disorders, Clinician Version (SCID-CV). Washington, DC: American Psychiatric Press, Inc.
- Gilbert, P. (2001). Evolution and social anxiety. The role of attraction, social competition, and social hierarchies. *The Psychiatric Clinics of North America*, 24(4), 723–751.
- Grös, D. F., Antony, M. M., Simms, L. J., & McCabe, R. E. (2007). Psychometric properties of the State-Trait Inventory for Cognitive and Somatic Anxiety (STICSA): Comparison to the State-Trait Anxiety Inventory (STAI). *Psychological Assessment*, 19(4), 369–381. http://dx.doi.org/10.1037/1040-3590.19.4.
- Gunthert, K. C., & Wenze, S. J. (2012). Daily diary methods. In M. R. Mehl & T. S. Conner (Eds.), *Handbook of research methods for studying daily life* (pp. 144–159). New York, NY: Guilford Press.
- Hackmann, A., Surawy, C., & Clark, D. M. (1998). Seeing yourself through others' eyes: A study of spontaneously occurring images in social phobia. *Behavioural and Cognitive Psychotherapy*, 26(1), 3–12. http://dx.doi.org/10.1017/S1352465898000022
- Handley, A. K., Egan, S. J., Kane, R. T., & Rees, C. S. (2014). The relationships between perfectionism, pathological worry and generalised anxiety disorder. *BMC Psychiatry*, 14(1), 8. http://dx.doi.org/10.1186/1471-244X-14-98
- Heerey, E. A., & Kring, A. M. (2007). Interpersonal consequences of social anxiety. *Journal of Abnormal Psychology*, 116(1), 125–134. http://dx.doi.org/10.1037/0021-843X.116.1.125

- Hofmann, S. G. (2007). Cognitive factors that maintain social anxiety disorder: A comprehensive model and its treatment implications. *Cognitive Behaviour Therapy*, *36*(4), 193–209. http://dx.doi.org/10.1080/16506070701421313
- Joiner, T. E., Alfano, M. S., & Metalsky, G. I. (1992). When depression breeds contempt: Reassurance seeking, self-esteem, and rejection of depressed college students by their roommates. *Journal of Abnormal Psychology*, 101(1), 165–173. http://dx.doi.org/10.1037/0021-843X.101.1.165
- Joiner, T. E., Alfano, M. S., & Metalsky, G. I. (1993). Caught in the crossfire: Depression, self-consistency, self-enhancement, and the response of others. *Journal of Social and Clinical Psychology*, *12*(2), 113–134. http://dx.doi.org/10.1521/jscp.1993.12.2.113
- Joiner, T. E., Katz, J., & Lew, A. S. (1997). Self-verification and depression among youth psychiatric inpatients. *Journal of Abnormal Psychology*, 106(4), 608–618. http://dx.doi.org/10.1037/0021-843X.106.4.608
- Kessler, R. C. (2003). The impairments caused by social phobia in the general population: Implications for intervention. *Acta Psychiatrica Scandinavica*, 108(417), 19–27. http://dx.doi.org/10.1034/j.1600-0447. 108.s417.2.x
- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, 62(6), 593–603. http://dx.doi.org/10.1001/archpsyc.62.6.593
- Leary, M. R. (1983). A brief version of the Fear of Negative Evaluation Scale. *Personality and Social Psychology Bulletin*, 9(3), 371–375. http://dx.doi.org/10.1177/0146167283093007
- Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy*, 33(3), 335–343. http://dx.doi.org/10.1016/0005-7967(94)00075-U
- McCabe-Bennett, H., Cassin, SE., & Antony, MM. (2015, May). *Naturalistic observation of perfectionistic behaviours*. Poster presented at the meeting of the Canadian Association of Cognitive and Behavioural Therapies, Calgary, AB, Canada.
- Meyer, T. J., Miller, M. L., Metzger, R. L., & Borkovec, T. D. (1990). Development and validation of the Penn State Worry Questionnaire. *Behaviour Research and Therapy*, 28(6), 487–495. http://dx.doi.org/10.1016/0005-7967(90)90135-6
- Morgan, J. F. (2007). p Value fetishism and use of the Bonferroni adjustment. *Evidence-Based Mental Health*, 10(2), 34–35. http://dx.doi.org/10.1136/ebmh.10.2.34
- Newman, M. G., Llera, S. J., Erickson, T. M., Przeworski, A., & Castonguay, L. G. (2013). Worry and generalized anxiety disorder: A review and theoretical synthesis of evidence on nature, etiology, mechanisms, and treatment. *Annual Review of Clinical Psychology*, 9, 275–297. http://dx.doi.org/10.1146/annurev-clinpsy-050212-185544
- Newman, M. G., Zuellig, A. R., Kachin, K. E., Constantino, M. J., Przeworski, A., Erickson, T., & Cashman-McGrath, L. (2002). Preliminary reliability and validity of the Generalized Anxiety Disorder Questionnaire-IV: A revised self-report diagnostic measure of generalized anxiety disorder. *Behavior Therapy*, 33(2), 215–233. http://dx.doi.org/10.1016/S0005-7894(02)80026-0
- North, R. J., & Swann, W. B. (2009). Self-verification 360°: Illuminating the light and dark sides. *Self and Identity*, 8(2-3), 131–146. http://dx.doi.org/10.1080/15298860802501516
- Parrish, C. L., & Radomsky, A. S. (2010). Why do people seek reassurance and check repeatedly? An investigation of factors involved in compulsive behavior in OCD and depression. *Journal of Anxiety Disorders*, 24(2), 211–222. http://dx.doi.org/10.1016/j.janxdis.2009.10.010
- Perneger, T. V. (1998). What's wrong with Bonferroni adjustments. *British Medical Journal*, *316*(7139), 1236–1238. http://dx.doi.org/10.1136/bmj.316.7139.1236
- Qualtrics Online Survey Software. (2015). [Computer software]. Provo, UT: Qualtrics.
- Rapee, R. M. (1985). Distinctions between panic disorder and generalised anxiety disorder: Clinical presentation. *Australian & New Zealand Journal of Psychiatry*, 19(3), 227–232. http://dx.doi.org/10.3109/00048678509158827

- Ree, M. J., French, D., MacLeod, C., & Locke, V. (2008). Distinguishing cognitive and somatic dimensions of state and trait anxiety: Development and validation of the State-Trait Inventory for Cognitive and Somatic Anxiety (STICSA). *Behavioural and Cognitive Psychotherapy*, 36(03), 313–332. http://dx.doi.org/10.1017/S1352465808004232
- Robichaud, M., & Dugas, M. J. (2005). Negative problem orientation (Part II): Construct validity and specificity to worry. *Behaviour Research and Therapy*, 43(3), 403–412. http://dx.doi.org/10.1016/j.brat.2004. 02.008
- Robinson, C. M., Klenck, S. C., & Norton, P. J. (2010). Psychometric properties of the Generalized Anxiety Disorder Questionnaire for DSM-IV among four racial groups. *Cognitive Behaviour Therapy*, 39(4), 251–261. http://dx.doi.org/10.1080/16506073.2010.486841
- Rodebaugh, T. L., Woods, C. M., Thissen, D. M., Heimberg, R. G., Chambless, D. L., & Rapee, R. M. (2004). More information from fewer questions: The factor structure and item properties of the original and Brief Fear of Negative Evaluation Scale. *Psychological Assessment*, *16*(2), 169–181. http://dx.doi.org/10. 1037/1040-3590.16.2.169
- Sanderson, W. C., & Barlow, D. H. (1990). A description of patients diagnosed with DSM-III-R generalized anxiety disorder. *The Journal of Nervous and Mental Disease*, 178(9), 588–591. http://dx.doi.org/10.1097/00005053-199009000-00006
- Sheehan, D. V., Lecrubier, Y., Sheehan, K. H., Amorim, P., Janavs, J., Weiller, E., Dunbar, G. C. . . . (1998). The Mini-International Neuropsychiatric Interview (M.I.N.I.): The development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *The Journal of Clinical Psychiatry*, 59 Suppl 20, 22–33.
- Sheehan, D. V. (2014). *The Mini-International Neuropsychiatric Interview, Version 7.0 for DSM-5 (MINI 7.0)*. Jacksonville, FL: Medical Outcomes Systems.
- Starcevic, V., Berle, D., Milicevic, D., Hannan, A., Lamplugh, C., & Eslick, G. D. (2007). Pathological worry, anxiety disorders and the impact of co-occurrence with depressive and other anxiety disorders. *Journal of Anxiety Disorders*, 21(8), 1016–1027. http://dx.doi.org/10.1016/j.janxdis.2006.10.015
- Swann, W. B., & Read, S. J. (1981). Self-verification processes: How we sustain our self-conceptions. *Journal of Experimental Social Psychology*, 17(4), 351–372. http://dx.doi.org/10.1016/0022-1031(81)90043-3
- Swann, W. B., Stein-Seroussi, A., & Giesler, R. B. (1992). Why people self-verify. *Journal of Personality and Social Psychology*, 62(3), 392–401. http://dx.doi.org/10.1037/0022-3514.62.3.392
- Swann, W. B., Wenzlaff, R. M., Krull, D. S., & Pelham, B. W. (1992). Allure of negative feedback: Self-verification strivings among depressed persons. *Journal of Abnormal Psychology*, 101(2), 293–306. http://dx.doi.org/10.1037/0021-843X.101.2.293
- Valentiner, D. P., Skowronski, J. J., McGrath, P. B., Smith, S. A., & Renner, K. A. (2011). Self-verification and social anxiety: Preference for negative social feedback and low social self-esteem. *Behavioural and Cognitive Psychotherapy*, 39(5), 601–617. http://dx.doi.org/10.1017/S1352465811000300
- Vittengl, J. R., & Holt, C. S. (1998). Positive and negative affect in social interactions as a function of partner familiarity, quality of communication, and social anxiety. *Journal of Social and Clinical Psychology*, 17(2), 196–208. http://dx.doi.org/10.1521/jscp.1998.17.2.196
- Weeks, J. W., Heimberg, R. G., Fresco, D. M., Hart, T. A., Turk, C. L., Schneier, F. R., & Liebowitz, M. R. (2005). Empirical validation and psychometric evaluation of the Brief Fear of Negative Evaluation Scale in patients with social anxiety disorder. *Psychological Assessment*, 17(2), 179–190. http://dx.doi.org/10. 1037/1040-3590.17.2.179
- Weeks, J. W., Heimberg, R. G., & Rodebaugh, T. L. (2008). The Fear of Positive Evaluation Scale: Assessing a proposed cognitive component of social anxiety. *Journal of Anxiety Disorders*, 22(1), 44–55. http://dx.doi.org/10.1016/j.janxdis.2007.08.002
- Weeks, J. W., & Howell, A. N. (2012). The bivalent fear of evaluation model of social anxiety: Further integrating findings on fears of positive and negative evaluation. *Cognitive Behaviour Therapy*, 41(2), 83–95. http://dx.doi.org/10.1080/16506073.2012.661452

- Wells, A., Clark, D. M., Salkovskis, P., Ludgate, J., Hackmann, A., & Gelder, M. (1995). Social phobia: The role of in-situation safety behaviors in maintaining anxiety and negative beliefs. *Behavior Therapy*, 26(1), 153–161. http://dx.doi.org/10.1016/S0005-7894(05)80088-7
- Wheeler, L., & Miyake, K. (1992). Social comparison in everyday life. *Journal of Personality and Social Psychology*, 62(5), 760–773. http://dx.doi.org/10.1037/0022-3514.62.5.760
- Woody, S., & Rachman, S. (1994). Generalized anxiety disorder (GAD) as an unsuccessful search for safety. *Clinical Psychology Review*, *14*(8), 743–753. http://dx.doi.org/10.1016/0272-7358(94)90040-X

Correspondence regarding this article should be directed to Martin M. Antony, PhD, Department of Psychology, Ryerson University, Toronto, ON, Canada, M5B 2K3. E-mail: mantony@psych.ryerson.ca